The need for extended FEC schemes: problem position

<draft-roca-rmt-extended-fec-problem-00>

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**Status (reminder of previous IETFs)**

- two proposals with similar goals
  - UOD for RaptorQ (Qualcomm)
  - GOE Reed-Solomon and GOE LDPC-Staircase (Inria/ALU Bell Labs)

- future still uncertain
  - within RMT?
  - elsewhere?
  - start a BOF to trigger new interest/participation?

- clear interest of QC and Inria/ALU-BL to continue work

- agreed to write a problem position I-D
  - it’s the goal of <draft-roca-rmt-extended-fec-problem-00>
  - our intent is to co-author it with QC
Quick overview of the I-D

- goal is to introduce the problem in a neutral way
  - independently of UOD and GOE
    - visible in the vocabulary: “extended” FEC schemes rather than “universal” or “generalized”
  - inherits many ideas from the GOE/UOD I-Ds
  - tries to clarify what we expect from an Extended FEC scheme

- warning: for the moment it reflects our view only!
In short...

- **MUST NOT** require a conflicting modification of CDP specifications
  - extending the FLUTE FDT Instance XML attributes for new FEC OTI parameters is fine
  - changing FLUTE/ALC core specifications is not
  - of course additional logic is needed to implement it

- **MUST** support at least two functionalities
  1. Unequal Erasure Protection (UEP) capabilities
     - a subset of an object may be of higher importance
  2. file bundle protection capabilities
     - e.g. for an efficient protection of a large set of small files

Corresponds to the use-cases put forward by both proposals, there’s nothing new here!
**In short... (cont)’**

- **MUST** be possible to use both Extended and traditional FEC schemes in the same CDP session
  - it may happen that different objects in the same session have different requirements

- define additional **good properties**
  - performance, predictability, algorithm agility, support of different codes, backward compatibility, etc.
  - useful to compare Extended FEC schemes if need be
  - whether it’s important or not depends on the target use-case
Next steps

- that’s all for the moment…
  - need to illustrate the I-D with examples
  - need to consolidate the list of requirements / properties

- … and need to figure out how to continue 😊